

Absorption Spectra of Monoazo Dyes of Type
Acid Red

77362

SOV/79-30-1-23/78

The authors wish to thank L. I. Belen'kiy and M. Ye. Kazanskoy for their assistance in this work. There are 4 figures; 1 table; and 10 references; 5 Soviet, 3 German, 2 U.K. The U.K. references are: De-Iaszlo, H. G., Proc. Roy. Soc., A 11, 355 (1926); Hodgson H., Trans. Far. Soc., 41, 278 (1945).

ASSOCIATION:

All-Union Correspondence Institute of Textile and Light Industry (Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti)

SUBMITTED:

October 24, 1958

Card 4/4

FEDOTOV, Ivan Prokop'yevich; YAVORSKIY, B.M., doktor fiziko-matem.nauk,
prof., red.; SIDOROV, N.I., red.; NOVOSELOVA, V.V., tekhn. red.

[Studying magnetic properties of matter in the physics course for
secondary schools] Izuchenie magnitnykh svoistv veshchestva v
kurse fiziki srednei shkoly. Pod red. B.M.Iavorskogo. Moskva, Izd-
vo Akad.pedagog.nauk RSFSR, 1961. 92 p. (MIRA 14:12)
(Physics—Study and teaching)

S/196/62/000/012/007/016
EO32/E114

AUTHOR: Yavorskiy, E.M.

TITLE: The principle of molecular amplification and coherent light sources (lasers)

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika, no.12, 1962, 2, abstract 12 V9. (Svetotekhnika, no.2, 1962, 1-5)

TEXT: These sources are based on the principle of molecular amplification of electromagnetic waves, which in turn is based on the phenomenon of simulated emission which was treated theoretically by A. Einstein (1917). The process of simulated emission is initiated by a beam of photons which bring atoms from an energy level E_2 to the lower energy level E_1 . The energy difference is emitted in the form of new photons and this simulated emission is coherent with the original radiation. The first formulation of this new principle of amplification was given by V.A. Fabrikant (1939-1940) who called attention to the fact that it is possible to have a medium with a negative absorption

Card 1/3

The principle of molecular ...

S/196/62/000/012/007/016
E032/E114

coefficient, provided $N_2/N_1 > 1$ where N_1 and N_2 are the atomic populations corresponding to E_1 and E_2 . By using such media it is possible to produce a cascade increase in the intensity of the radiation. This type of medium was produced by F.A. Butayeva and V.A. Fabrikant who used Hg vapour with an addition of molecular hydrogen, the mixture being excited by glow discharge. An amplification of 1.4 and 1.1 was obtained with the first two lines of the Hg triplet ($\lambda = 5460.74$ and 4358.34 \AA). The amplification effect may be enhanced by multiple transits of the amplified signal through a given layer of the amplifying medium by placing the latter between two mirrors. In 1958 A.M. Prokhorov showed that the use of such a device may lead to a transition from amplification to generation. If one of the mirrors is made slightly transparent, then a parallel beam of coherent radiation of enormous intensity is produced with a range of up to $10^{13} - 10^{14} \text{ km}$. A description is given of a number of such coherent sources (lasers) in which the active media are ruby, calcium fluorite (pulsed operation) and the plasma of a h.f. gas

Card 2/3

The principle of molecular ...

S/196/62/000/012/007/016
E032/E114

discharge (continuous operation).
2 figures, 13 references.

ASSOCIATION: Moskovskiy tekstil'nyy.in-t
(Moscow Textile Institute)

Card 3/3

RYDNIK, V.I.; YAVORSKIY, B.M.

Neutralization of slow ions and deactivation of metastable atoms
near metal surfaces. Dokl. AN SSSR 144 no.5:1026-1029 Je
'62. (MIRA 15:6)

1. Predstavleno akademikom L.A.Artsimovichem.
(Ions) (Electrons) (Atoms)

YAVORSKIY, Boris Mikhaylovich; DETLAF, Andrey Antonovich; GUROV, K.P.,
red.; MURASHOVA, N.Ya., tekhn. red.

[Manual on physics; for engineers and university students]
Spravochnik po fizike; dlia inzhenerov i studentov vuzov.
Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1963. 847 p.

(MIRA 16:8)

(Physics)

YAVORSKIY, B.M.
12 June

ELEMENTARY PROCESSES NEAR SURFACES IN A GAS DISCHARGE (USSR)

Rydnik, V. I., and B. M. Yavorskiy. Radiotekhnika i elektronika, v. 8,
no. 4, Apr 1963, 639-645. S/109/63/008/004/013/030

A method for the solution of the problem of neutralization of ions and deactivation of metastable atoms near metal or dielectric surfaces is presented. The method, elaborated from ideas of Oliphant and Moon, offers a simpler way, not connected with the perturbation theory, of dealing with the relevant potential and kinetic phenomena. For metals, electron emission caused by ions or metastable atoms is considered as a peculiar "cold emission" process in the electric fields of the ions and atoms lying close to the surface of the metal. In dielectrics the corresponding process is considered as a "local disruptive discharge"; in this instance the results of the Fowler — Nordheim theory became applicable. Such emission is a product of a tunnel effect through the potential barrier or potential well on the surface of a metal or dielectric, respectively. The same approach is also applicable to the deactivation process of metastable atoms. Expressions for the probability of ion neutralization and atom reactivation near the surface are given which are in good agreement with results obtained from the collision theory.

[FVP]

Card 1/1

MURAV'YEV, V.T.; YAVORSKIY, B.M.

Elastic scattering of slow S-electrons by helium atoms. Opt.
i spektr. 15 no.1:132-133 J1 '63. (MIRA 16:8)

(Electrons--Scattering)

FEDOTOV, I. P., assistant; YAVORSKIY, B. M., prof.; PETROV, V. V.

Measuring the specific susceptibility of metalized fabrics.
Tekst. prom. 23 no.3:81-82 Mr '63. (MIRA 16:4)

1. Kafedra fiziki Moskovskogo tekstil'nogo instituta (MTI)
(for Fedotov). 2. Zaveduyushchiy kafedroy fiziki Moskovskogo
tekstil'nogo instituta (for Yavorskiy). Nachal'nik laboratorii
fiziki Moskovskogo tekstil'nogo instituta (for Petrov).

(Metal cloth—Magnetic properties)

FEDOTOV, I.P., kand. tekhn. nauk, dotsent; YAVORSKIY, B.M., prof.

Dielectric properties of metallized cloth. Tekst. prom. 23
no.12:65-68 D '63. (MIRA 17:1)

1. Kafedra fiziki Moskovskogo tekstil'nogo instituta (for
Fedotov). 2. Zaveduyushchiy kafedroy fiziki Moskovskogo
tekstil'nogo instituta (for Yavorskiy).

RYDNIK, V.I.; YAVORSKIY, B.M.

Calculation of nonresonance charge exchange and ionization of atoms
in collisions with slow ions. Izv. AN SSSR. Ser. fiz. 27 no.8:
1005-1008 Ag '63. (MIRA 16:10)

S/020/63/149/001/013/023
B144/B186

AUTHORS: Yavorskiy, B. M., Kochetkova, N. S., Zaslavskaya, G. B.,
Nesmeyanov, A. N., Academician

TITLE: Absorption spectra of some ferrocene derivatives

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 1, 1963,
111-113

TEXT: Absorption spectra were taken of acyl and alkyl ferrocene derivatives dissolved in isooctane. Results: 1) The break at 528 mμ described by D. R. Scott, R. S. Becher (J. Chem. Phys., 35, 516 (1961)) was not observed. 2) An almost complete conformity was detected in the absorption spectra (280 - 600 mμ) of: a) normal monosubstituted ferrocene homologs, such as monoethyl and mono-n-propyl ferrocene; b) normal heterocyclic disubstituted ferrocene homologs, such as 1,1'-diethyl and 1,1'-di-n-propyl ferrocene; c) normal monosubstituted acyl derivatives of ferrocene, such as monoacetyl, monopropionyl and mono-n-butyryl ferrocene; d) normal heterocyclic diacyl derivatives of ferrocene, such as 1,1'-diacetyl, 1,1'-dipropionyl and 1,1'-di-n-butyryl ferrocene. 3) The

Card 1/3

S/020/63/149/001/013/023
B144/B186

Absorption spectra of some ...

spectra of the heterocyclic disubstituted ferrocene derivatives differed from those of the corresponding monosubstituted compounds in the position as well as in the intensity of the absorption bands. 4) The absorption spectra depend on the nature of the substituting group: a) The difference between the absorption bands of ferrocene and its alkyl homologs is only slight. An insignificant hypsochrome shift of the 440 mμ band was observed together with an increase in its intensity in the order ferrocene - normal alkyl ferrocenes - normal heterocyclic dialkyl ferrocenes; b) In the spectra of ferrocene compounds with electron-acceptor substituents (monoacyl and heterocyclic diacyl ferrocene derivatives) a marked bathochrome shift of the 440 mμ band was observed; the intensity of this band increased in the order ferrocene - monoacyl derivatives - heterocyclic diacyl derivatives. Instead of the 325 mμ band of ferrocene, a band was detected at 318 mμ; the break was located at 356 mμ. A further study will deal with homocyclic ferrocene derivatives. There are 2 figures and 2 tables.

ASSOCIATION: Institut elementoorganicheskikh sovedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

Card 2/3

Absorption spectra of some ...

S/020/63/149/001/013/023
B144/B186

SUBMITTED: December 1, 1962

Card 3/3

VOLODINA, L.A.; KLYUCHAREV, S.V.; DMITRIYEV, S.A.; YAVORSKIY, B.M.

Spectrophotometric analysis of the selectivity of direct dyes
by staple fabrics. Izv.vys. ucheb. zav.; tekhn. tekst. prom.
no.6:124-129 '63 (MIRA 17:8)

1. Moskovskiy tekstil'nyy institut, shelkootdelochnaya fabrika
imeni Ya.M. Sverdlova.

VOLODINA, L.A.; YAVORSKIY, B.M.

Determining dye concentration on dyed fabrics by the reflection
spectrum. Izv. vys. uchob. zav.; tekhn. tekhn. prom. no. 4:97-104,
'64. (MIRA 17:12)

1. Moskovskiy tekstil'nyy institut.

VOLODINA, L.A., aspirantka; YAVORSKIY, B.M., prof.

Optical method for evaluating the take-in of dyes by textile fabrics. Tekst. prom. 24 no.9:55-60 S '64.

(MIRA 17:11)

1. Kafedra fiziki Moskovskogo tekstil'nogo instituta (for Volodina).
2. Zaveduyushchiy kafedroy fiziki Moskovskogo tekstil'nogo instituta (for Yavorskiy).

VOLODINA, L. A.; RYAZANTSEV, Yu. S.; YAVORSKIY, B. M.

"The diffusion of straight dyes into fiber."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk,
4-12 May 1964.

Moscow Textile Inst.

YAVORSKIY, Boris Mikhaylovich; DETLAF, Andrey Antonovich.
Prinimali uchastiye: KHAZANOVICH, T.N.; PANOVKO,
Ya.G.; GUROV, K.P., red.

[Physics handbook for engineers and students of institutes
of higher learning] Spravochnik po fizike dlia inzhenerov
i studentov vuzov. Izd. 2., ispr. Moskva, Nauka, 1964.
847 p. (MIRA 17:12)

SELEZNEV, Yuriy Aleksandrovich; YAVORSKIY, B.M., prof., red.;
VERES, L.F., red.

[Fundamentals of elementary physics; a textbook for self-
education] Osnovy elementarnoi fiziki; posobie dlia samo-
obrazovaniia. Moskva, Nauka, 1964. 374 p. (MIRA 17:12)

SOURCE: AN SSSR, Doklady v. 100 (1961), 817-8.

TOPIC TAGS: ferrocene derivative, absorption spectrum, isooctane, arylferrocene, carboxylic acid, dicarboxylic acid, acyl, alkyl

ABSTRACT: The present work is a continuation of earlier investigations by the author and others concerning the mechanism of formation of the "fingerprint" pattern.

as a SP-4 double monochromator. The solvent used was isooctane. The spectra of alkyl derivatives as well as of a yl and a k.

Copy : 2

ACCESSION NR: AP5006855

carboxylic acid derivatives of ferrocene of type $R_1-C_{10}H_8Fe-R_2$ are presented.
The findings of the authors show that the reaction of ferrocene with carboxylic acids in the presence of a catalyst leads to the formation of ferrocene carboxylic acid derivatives.

ASSOCIATION Institut elemento-organicheskoj khimii Akademii Nauk SSSR
Moscow, U.S.S.R.

Card 2/2

YAVORSKIY, Boris Mikhaylovich; DETLAF, Andrey Antonovich;
MILKOVSKAYA, Lidiya Bronislavovna; SERGEYEV, Georgiy
Petrovich; PERKOVSKAYA, G.Ye., red.

[Physics course] Kurs fiziki. Moskva, Vysshaya shkola.
Vol.1. Izd.3., 1965. 375 p. (MIRA 18:7)

I 33283-66 EWP(J)/EWT(M) RM

ACC NR: AR6017230

SOURCE CODE: UR/0058/65/000/012/D027/D027

AUTHORS: Yavorskiy, B. M.; Zaslavskaya, G. B.; Kochetkova, N. E.; Nesmeyanov, A. N.

TITLE: Absorption spectra of certain derivatives of ferrocene

SOURCE: Ref. zh. Fizika, Abs. 12D218

REF SOURCE: Tr. Komis. po spektroskopii, AN SSSR, t. 3, vyp. 1, 1964, 350-354

TOPIC TAGS: absorption spectrum, ferrocene, absorption band

ABSTRACT: The authors investigated the absorption spectra of ferrocene, of its alkyl and acyl derivatives in the region 300--180 nm, and also the absorption spectra of carboxylic acids of ferrocene and their ethers in the 180-230 nm region. The oscillator strengths of all the investigated bands are calculated for absorption. Earlier deductions concerning the position of the bands and the laws governing their shifts are confirmed. [Translation of abstract]

SUB CODE: 20 ,07/

Card 1/1

ACC NR: AP7005520

(A)

SOURCE CODE: UR/0342/66/000/011/0072/0072

AUTHOR: Volodina, L. A. (Docent); Gaydukov, V. I. (Aspirant); Yavorskiy, B. M. (Professor)

ORG: [Volodina; Gaydukov] MTI

TITLE: Applying neutral light filters to improve precise measurement of reflection coefficients for dyed fabrics

SOURCE: Tekstil'naya promyshlennost', no. 11, 1966, 72

TOPIC TAGS: ^{light}reflection coefficient, transmission coefficient, glass optic property, spectrophotometer, ~~textile~~, ~~optic filter~~ / SF-10 spectrophotometer, NS-6 filter, NS-7 filter, NS-9 filter

ABSTRACT: In measuring reflection coefficients by spectrophotometer or photometer, a glass neutral filter placed in the path of the calibrating beam will increase the reflection coefficient by $\frac{1}{T_\lambda}$ (T_λ is the transmission coefficient). The true values

of the reflection coefficients in this case will be $R_{\lambda \text{ true}} = R_{\lambda \text{ meas}} T_\lambda$, where

$R_{\lambda \text{ meas}}$ is the value of the reflection coefficients with the introduction of the light filter. Such a filter was used in an SF-10 spectrophotometer with polarized light in examining dyed fabrics, and was found to double the minimum and maximum

Card 1/2

UDC: 677.064.535.345.6.001.5

ACC NR: AP7005520

reflection coefficients, probably due to the relation of dye molecules to fiber axes in the fabric. A table gives percentages of error in determining reflection coefficients by three filters NS-6, NS-7 and NS-9. Orig. art. has: 3 formulas, 1 table, and 1 figure.

SUB CODE: 11, 14²⁰/SUBM DATE: none

Card 2/2

YAGUPOL'SKIY, L.M.; VISHNEVSKAYA, G.O.; YAVORSKIY, D.F.; GRUZ, B.Ye.;
MAKSIMENKO, A.S.; KHASKIN, I.G.; GONSETSKAYA, Ya.V.; KIPRIANOV,
A.I.

Improvement in the method for producing p-nitrophenylchloro-
methylcarbinole. Med.prom. 13 no.3:20-21 Mr '59.

(MIRA 12:5)

1. Institut organicheskoy khimii AN USSR i Kiyevskiy khimiko-
farmatsvticheskiy zavod imeni M.V.Lomonosova.
(METHANOL)

KHASKIN, I.G.; SERGUCHEV, Yu.A.; PROSHKIN, A.A.; VISHNEVSKAYA, G.I.;
YAVORSKIY, D.F.

Production of trichloroacetic acid from tetrachlorethylene. Med.
prom. 15 no.1:39-42 Ja '61. (MIRA 14:1)

1. Institut ispol'zovaniya gaza Akademii nauk USSR.
(ACETIC ACID)

BATYUK, V.P., kand. biolog. nauk; YAVORSKIY, D.F. [Iavors'kyi, D.F.]

Use of a mixture of isomers of nitrophenylchloromethyl carbinols
in herbicide systems. Khim. prom. no.4:60-62 O-D '64.
(MIRA 18:3)

YAVORSKIY, P.P.

In two directions. Nauka i pered. op. v sel'khoz. 7 no. 4:45-46
Ap '57, (MIRA 10:6)

1. Glavnyy agronom Kotovskoy Mashinno-traktornoy stantsii, Odesskoy oblasti,

(Sugar beets)

YAVORSKIY, F.^P; BOROVSKIY, S.

Over-all mechanization of sugar beet cultivation. Nauka i pered. op.
v sel'khoz, 8 no. 7:40-42 J1 '58. (MIRA 11:8)

(Sugar beets)
(Agricultural machinery)

YAVORSKIY, F. P. Cand Agr Sci -- (diss) "Cross cultivation of sugar-beet ~~crops~~ ^{the placement.}
in check-row ~~distributions~~ of plants." Odessa, 1959. 17 pp (Min of Agr UkSSR.
Odessa Agr Inst), 150 copies (KL, 44-59, 128)

SOV/84-58-10-48/54

AUTHORS: Yavorskiy, G.; Suleymanov, M., Kiyev

TITLE: ~~Supply~~ System Improved (Snabzheniye uluchshilos')

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 10, p. 38 (USSR)

ABSTRACT: The Ukrainian Administration of the GVF (Civil Air Fleet) experimented in combining the operation of warehouses of units, repair shops, as well as loading and unloading services at the Kiyev airport. The measure proved so effective after a brief experiment that the Main GVF Administration consented to the extension of the system and combine the administrative service supply with all Kiyev units. Operating under the chief at the joint base are now a chief engineer in charge of jet technique and the following departments: plane engines and spareparts; electrical and radio supplies, maintenance of plane equipment; fuel and lubricating materials; motor vehicle transportation and mechanization facilities. The base will also have its planning and accounting departments, a central warehouse and a dispatch office. Supervision over the specialized supply sectors was entrusted to skilled engineers and technicians.

Card 1/1

YAVORSKIY, G., inzh.

Improve the quality of finishing operations to meet modern demands. Stroitel' arkhitekt. 8 no.6:27-28 Je '60.

(MIRA 13:6)

(Plastering) (House painting) (Floors)

GLUKHOVSKIY, V.D., inzhener; YAVORSKIY, G.A., inzhener; NECHAYEV, S.F.,
inzhener.

Planning construction of a multistory industrial building using
precast reinforced concrete elements. Stroi.prom. 32 no.4:21-25
Ap '54.

(MLRA 7:5)

(Precast concrete construction)

YAVORSKIY, G., inzh.; GIRSHTEL', B., inzh.

Manufacturing large brick blocks in Kiev. Gor. i sel'. stroi. no.11:
4-8 II '57. (MIRA 11:1)

(Kiev--Building blocks)

MIKHAYLOV, V.A.; SKACHKOV, I.A.; YAVORSKIY, G.A.; GINZBURG, S.M.; PALEVSKIY, S.A., inzh., nauchnyy red.; SKVORTSOVA, I.P., red.izd-va; TOKER, A.M., tekhn.red.

[Building apartment houses with large brick blocks; practices of the Main Kiev Building Administration] Stroitel'stvo zhilykh domov iz krupnykh kirpichnykh blokov; opyt Glavkievstroia. Moskva, Gos. izd-vo lit-ry po stroit. i arkhit., 1958. 69 p. (MIRA 11:5)
(Building, Brick)

SOV/100-59-9-9/13

AUTHOR: Yavorskiy G. A. and Girshtel', B. I. Engineers

TITLE: Mechanisation of Manufacturing Processes of Large Pre-laid Brick Blocks. (Mekhanizatsiya izgotovleniya krupnykh kirpichnykh blokov).

PERIODICAL: Mekhanizatsiya Stroitel'stva, 1958, Nr.3. pp. 17 - 20. (USSR).

ABSTRACT: This method of building is used extensively in Kiev. In 1956 blocks were cast in wooden formwork on building sites. Since 1957 the production has been transferred to factories, and in 1958 the management of the Industry for Building Materials of the Kiev Gorispolkom decided to produce in brickworks 100,000 m³ of these blocks i.e. 18% of the yearly requirements of Glav'kiyevstroy. Special sections were formed in factories where large pre-laid brick blocks were manufactured using semi-automatic plant DP-18 (Fig.1). This plant was constructed according to the design of Tsentrogiproshakhtostroy; it consists of a stand DS-16 for laying blocks, pneumatic pushrod DT-66 and a rolltable DT-65. This plant produces brick blocks 380, 510 and 640 mm thick, up to 3,000 mm long, 1,650 mm wide and maximum weight of 4,500 kg. Details of the process of manufacture of these blocks are illustrated in

Card 1/3

SOV/100-58-9-9/13

Mechanisation of Manufacturing Processes of Large Pre-Laid Brick Blocks.

Fig.2. Fig.3 shows the wetting of bricks, whilst travelling on the conveyor belts, by a spray attached to the sides of the belt. The mortar is prepared in a mortar-mixer of 150 l capacity. A detailed description of the processes of manufacture is given. Glavkiyevstroy, in collaboration with Tsentrogiproshakhtostroy, constructed plant DP-18. The problem of the thickness and the level of brick joints was solved by engineers of the Glavkiyevstroy who added to the previously described plant a vibro-stamp. Fig.4 illustrates the semi-automatic plant for the formation of pre-laid brick blocks DP-18 with attached vibro-stamp. Two types of electrical vibrators are used - S-413 and I-7. Fig.5 shows stand for rendering of the pre-laid brick blocks. The steam-curing of blocks takes place in special chambers for a period of 12 hours where they reach 70% of the final strength. There are two types of lifting mechanism used in Kiev factories for loading blocks, ZKS-4 and lever type of self-gripping lifting mechanism as illustrated in Fig.7. The latter type is much more efficient. Fig.8: a way of loading and securing blocks on lorries. The Glav-

Card 2/3

SOV/100-53-8-9/13

Mechanisation of Manufacturing Processes of Large Pre-Laid Brick Blocks.

kiyevstroy, together with NIIOMTP of the Academy of Building and Architecture of USSR (Akademiya stroitel'stva i arkhitektury USSR) published a booklet illustrating special tools, equipment and assembly methods connected with the construction of houses from pre-laid brick blocks. With this method of building the Glavkiyevstroy speeded up the erection of buildings, achieved economy and fully utilized building cranes. There are 3 Figures.

1. Construction--USSR 2. Construction materials--Production

Card 3/3

MIKHAYLOV, Veniamin Alekxandrovich; YAVORSKIY, Georgiy Andreyevich;
GIRSHTEL', Boris Isaakovich; MIKHAYLOV, G., red.; ZELENKOVA, Ye.,
tekhn.red.

[Large brick blocks in construction; production and use] Krupnye
kirpichnye bloki v stroitel'stve; proizvodstvo i primeneniye. Kiev,
Gos.izd-vo lit-ry po stroit. i arkhitekt.USSR, 1959. 191 p.

(MIRA 13:3)

(Building blocks)

BOYCHENKO, A.; YAVORSKIY, G.; GINZBURG, Sh.

Using large brick building blocks in Kiev. Zhil. stroi. no.8:10-14
'59. (MIRA 12:12)

1. Zamestitel' nachal'nika Glavkiyevstroya (for Boychenko).
2. Nachal'nik Kiyevorgtekhstroya (for Yavorskiy). 3. Nachal'nik
smetno-dogovornogo otdela Glavkiyevstroya (for Ginzburg).
(Kiev--Building blocks)

LYSENKO, Nikolay Prokof'yevich; BOREYKO, Aleksandr Vasil'yevich; YAVOR-
SKIY, Georgiy Andreyevich; GIRSHTEL', Boris Isaakovich [deceased];
SLIN'KO, B.I., red.; NARINSKAYA, A.L., tekhn. red.

[Continuous construction of residential blocks in Kiev] Opyt po-
tochnoi zastroiiki zhilykh massivov v Kieve. Kiev, Gos. izd-vo
lit-ry po stroit. i arkhit. USSR, 1961. 141 p. (MIRA 14:9)
(Kiev—Construction industry) (Apartment houses)

YAVORSKIY, G., inzh.

Artificial drying of precast dwellings, Zhil. stroi. no. 3:25-26
Mr '61.

(MIRA 14:4)

(Precast concrete construction)

MAZALOV, L.; YAVORSKIY, I., doktor tekhn.nauk

In favor of the application of the communist labor movement
in science. Tekh.mol. 30 no.9:8 '62. (MIRA 15:9)

1. Sekretar' komiteta Vsesoyuznogo Leninskogo kommunisticheskogo
soyuza molodezhi (for Mazalov). 2. Predsedatel' nauchno-
proizvodstvennoy komissii Ob'yedinennogo komiteta
professional'nogo soyuza Sibirskogo otdeleniya AN SSSR
(for Yavorskiy).

(Research)
(Socialist competition)

YAVORSKIY, I. A.

PA 10/49T31

USSR/Electricity
Power Plants, Thermal
Power Plants, Electric

May 48

"Experimental Organization of Thermal Control in
Boiler and Turbine Shops of Power Stations," I. A.
Yavorskiy, Engr, 4 $\frac{1}{2}$ pp

"Za Ekonomiyu Topliva" No 5

A small, 50-year old, electric power station was
changed in 1943 to system of Ministry of Electro-
stations. Describes fuel saving by installing
measuring instruments and automatic regulating
system.

10/49T31

1ST AND 2ND EDITIONS										PROCESSES AND PROPERTIES INDEX										3RD AND 4TH EDITIONS									
F. YAVORSKIY, I. LUD																													
<p>2590. IMPROVED DESIGN OF CHAIN GRATES WITH DOWNFALL PREVENTION. Yavorski, I. (Za Ekon. Topliva (Fuel Econ.), Jan. 1951, 13-18).</p> <p>Chain grates at present produced in Russian factories are deficient in several respects in regard to fuel economy and the present article describes how they, and in particular type B. Ts.R. -1, can be improved at little expense, bringing greater boiler economy to power plants and factories. (L).</p>																													
<p>ASB SIA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>820000 417 QW QSE</p> <p>820000 417 QW QSE</p>																													

YAVORSKIY, I.A., kandidat tekhnicheskikh nauk

Combustion of run-of-the-mill coals from the Anzhero-Sudzhensk
deposit on a chain grate. Trudy Transp.-energ.inst.Zap.-Sib.
fil.AN SSSR no.2:3-40 '52. (MIRA 8:12)

(Combustion) (Stokers, Mechanical)

BTR. LAVOROV, I. A.

20

9086* Pneumatic Sorting of Mine-Run Coals While Burn-
ing Them on Chain Grates. (In Russian.) I. A. LAVOROV
Za Ekonomiku Topliva, v. 9, Jan. 1952, p. 9-13.
Diagrams and graphs show principle of above equipment and
its performance.

YAVORSKIY, I.A., kandidat tekhnicheskikh nauk.

Limit conditions for burning peat in furnaces. Trudy Transp.-
energ.inst.Zap.-Sib.fil.AN SSSR no.6:63-76 '56. (MLRA 10:2)

(Peat) (Combustion)

"APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R001962320001-7

APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R001962320001-7"

YAVORSKIY, I.A.

AUTHOR: Yavorskiy, I. A. (Novosibirsk).

24-12-3/24

TITLE: Results of investigation of the features of combustion in the kinetic range of natural coals and of the individual petrographic components. (Rezultaty issledovaniy osobennostey goreniya v kineticheskoy oblasti naturnykh ugley i otdel'nykh petrograficheskikh sostavlyayushchikh).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1957, No.12, pp.15-21 (USSR)

ABSTRACT: Natural coal can interact with oxygen even at relatively low temperatures. This is accompanied by liberation of heat and can culminate in self-ignition which is highly undesirable during storage or directly in coal mines but, if it develops inside heating equipment, it may lead to faster ignition and, consequently, to more efficient combustion. For studying the self-heating and the preparation of fuel for combustion, experiments were carried out in which the conditions were reproduced which exist in industrial furnaces with layer and flame-layer methods of combustion. In contrast to the procedures applied by Oreshko, F.F. (Ref.1) and Shagalova, S.L. (Ref.2), the entire blast was fed through the layer. The test

Card 1/4

Results of investigation of the features of combustion in the kinetic range of natural coals and of the individual petrographic components. 24-12-3/24

set-up is shown in Fig.1; through a tube, air was passed which was heated to the required temperature and fed through a layer of coal, thereby the heat losses of the layer were compensated by a special heater which was controlled by a thermocouple fitted on the tube wall. The air consumption was measured by means of a disc and a micro-pressure gauge and the temperature was measured by means of thermocouples of 0.1 mm dia. Prior to using it, the air was purified from CO_2 and moisture and the emitted gases were subjected to analysis for CO , CO_2 , H_2 and CH_4 , determining also the quantity of water vapour. The experiments consisted in charging 30 to 50 g of coal with particle dimensions of 0.96 to 1.74 mm into the test set-up, which had previously been heated and supplied with a regulated flow of air; the temperature was measured at the beginning at intervals of 15 to 30 sec and during the slow growth at intervals of 1 to 2 mins, simultaneously taking gas samples. Fig.2, p.16, shows the change in the temperature of the coal T as a function of the time τ at various initial blast temperatures for

Card 2/4

24-12-3/24

Results of investigation of the features of combustion in the kinetic range of natural coals and of the individual petrographic components.

an approximately equal blast flow speed (3.3 to 3.4 cm/sec); it can be seen that the activity of the process depends appreciably on the initial temperature of the heat carrier. The graphs, Fig.3, show the dependence of the coal temperature on time for various air flow speeds and various initial air temperatures; the graphs, Fig.4, show typical curves of the process of self-ignition of natural coals. A characteristic feature of low temperature combustion in the kinetic range of natural coals, distinguishing it from the process of combustion of carbon and coke, is the preferential reaction with oxygen of hydrogen containing compounds, as can be seen clearly from the experimental data entered in Table 1. The author investigated also the features of combustion of the individual petrographic components, the results of which are graphed in Fig.5; these show that fusain heats up and ignites the fastest, for durain the process is somewhat slower, then follows vitrain, whilst clarain does not ignite at all, although its temperature was 70°C higher

Card 3/4 than the temperature of the blast. Thus, it was found

Results of investigation of the features of combustion in the kinetic range of natural coals and of the individual petrographic components. 24-12-3/24

that the most active petrographic component in the low temperature kinetic range is fusain which contains less volatiles and hydrogen but a larger total pore surface than the other components. Change of the quantitative ratio of the petrographic components for otherwise equal conditions also leads to an appreciable change in the activity of the process of reaction. There are 6 figures, 3 tables and 9 references, all of which are Slavic.

SUBMITTED: November 22, 1956.

AVAILABLE: Library of Congress.

Card 4/4

YAVORSKIY, I.A.

Structure of the flow of a single jet and a system of flat jets.
Izv. Sib. otd. AN SSSR no.2:62-74 '58. (MIRA 11:9)

1. Zapadno-Sibirskiy filial AN SSSR.
(Jets--Fluid dynamics)

YAVORSKIY, I.A.

Aerodynamics of streams in disperse media. Izv. Sib. otd. AN SSSR
no.4:81-93 '58. (MIRA 11:9)

1. Zapadno-Sibirskiy filial AN SSSR.
(Fluid dynamics)

YAVORSKIY, I.A.

Aerodynamics of a pseudoliquidified layer with a solid phase.
Izv. Sib. otd. AN SSSR no.6:104-115 '58. (MIRA 11:9)

1. Zapadno-Sibirskiy filial AN SSSR.
(Fluid dynamics)

SOV/180-59-3-37/43

AUTHOR: Yavorskiy, I.A. (Novosibirsk)

TITLE: On the Establishment of Relationships between the Change in the Reacting Surface During the Combustion of Coals Under Kinetic Conditions and Their Petrographic Composition

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 3, pp 176-179(USSR)

ABSTRACT: During purely kinetic conditions of combustion, the reactivity of a solid fuel depends to a large extent on its structural properties i.e. size, number and shape of pores and cracks, the quantitative expression of which is determined by specific surface which can be reached by oxygen and other gases. Data on specific surface of pores and their dimensions for the main coal types and cokes are not available. The author has carried out experimental determination of quantitative relationships of the specific surface of pores and their dimensions for particles of various diameters in metallurgical coke, coals of various ranks and petrographic components of a gas coal. For the determination of specific surface, the method described in Ref 4 was used. The

Card 1/3

SOV/180-59-3-37/43

On the Establishment of Relationships between the Change in the Reacting Surface During the Combustion of Coals Under Kinetic Conditions and Their Petrographic Composition

dependence of changes in the total and external surface $S \text{ m}^2/\text{m}^3$ on particle size $\delta\mu$ are shown in Fig 1. The total and external surface of particles of various size of petrographic components of a gas coal is shown in Fig 2. The results obtained can be described by a general formula: $S = A\delta^{-n} [\text{m}^2/\text{m}^3]$, where δ - mean particle size, μ ; $S = S' + S''$ - total specific surface per unit volume of particles, consisting of the geometrical (external) surface S' and internal surface of pores S'' . The values for A and n are given in the table. The dependence of changes in the geometrical surface of coal particles on their size can be determined from the formula: $S' = 6.7\delta^{-1.0} [\text{m}^2/\text{m}^3]$. With decreasing particle size their total surface approaches the value of their geometrical surface, this limiting size of particles (δ_1) can be determined from the formula:

Card 2/3

$$\delta_1 = 1.09 \frac{d}{\sqrt{V''}} \quad \left(d = \frac{4V''}{S} \right)$$

SOV/180-59-3-37/43

On the Establishment of Relationships between the Change in the Reacting Surface During the Combustion of Coals Under Kinetic Conditions and Their Petrographic Composition

where 1.09 - coefficient taking into consideration the shape of particles; V'' - volume of pores expressed as a fraction of the total volume and determined by the usual standard method (Ref 6); d - mean diameter of pores, m ; (the calculated results are given in the table). In calculation the value of the total specific surface is taken for a particle size δ_2 at which the permeability of the main part of pores is secured. On consideration of the data it is concluded that pure kinetic type of combustion (free from the influence of diffusion) can be obtained only for coke particles and to some extent for fusion of gas coal. There are 2 figures, 1 table and 8 references, 7 of which are Soviet and 1 English.

SUBMITTED: July 18, 1958

Card 3/3

YAVORSKIY, I.A.

Characteristics of the start-up of natural coals and ways to intensify the ignition in the case of flame fuel bed burning.
Trudy Transp.--energ.inst.Sib.otd. AN SSSR no.8:5-17 '59. (MIRA 15:5)
(Furnaces--Combustion)

YAVORSKIY, I.A.; SHARLOVSKAYA, M.S.

Experimental study of the start-up of natural coal in the bed
with hot air blast. Trudy Transp.-energ.inst.Sib.otd. AN SSSR
no.8:41-48 '59. (MIRA 15:5)
(Furnaces---Combustion)

YAVORSKIY, I.A., kand.tekhn.nauk, otv.red.; DUDNIK, R.L., red.; MAZUROVA,
A.F., tekhn.red.

[Problems in the use of Siberian fuels for power production]
Voprosy energotekhnologicheskogo ispol'zovaniia topliv Sibiri.
Otv.red. I.A.Iavorskii. Novosibirsk, Izd-vo Sibirskogo otd-niia
AN SSSR, 1960. 142 p. (MIRA 13:6)

1. Akademiya nauk SSSR. Zapadno-Sibirskiy filial, Novosibirsk.
Transportno-energeticheskiy institut.
(Siberia--Power engineering)

YAVORSKIY, I.A.

Role of the inner surface of pores in the oxidation and combustion
of coal. Izv.Sib.otd.AN SSSR no.9:72-81 '60. (MIRA 13:11)

1. Transportno-energeticheskiy institut Sibirskogo otdeleniya AN SSSR.
(Coal--Porosity) (Combustion)

YAVORSKIY, I. A.

Doc Tech Sci - (diss) "Problems of the theory of combustion of fossil coals and intensification of initial phases of its combustion." Moscow, 1961. 38 pp; (Academy of Sciences USSR, Power Inst imeni G. M. Krzhizhanovskiy); 200 copies; price not given; list of author's works on pp 37-38 (27 entries); (KL, 7-61 sup, 231)

YAVORSKIY, Ivan Afanas'yevich; DREMOVA, T.A., red.; LOKSHINA, O.A.,
tekhn. red.; VYALYKH, A.M., tekhn. red.

[Theory of combustion of fossil coals and the intensification
of their ignition] Voprosy teorii gorenii iskopaemykh uglei i
intensifikatsiia ikh vosplameneniia. Novosibirsk, Izd-vo Sibir-
skogo otd-niia AN SSSR, 1961. 205 p. (MIRA 15:7)
(Combustion)

YAVORSKIY, I.A.

Role of volatile substances in the burning of coal. Izv. Sib. otd.
AN SSSR no. 3:29-37 '61. (MIRA 14:5)

1. Transportno-energeticheskiy institut Sibirskogo otdeleniya
AN SSSR, Novosibirsk.

(Combustion)

ORENBAKH, M.S.; YAVORSKIY, I.A.

Ignition temperature of oxidized coal, Izv.Sib.otd.AN SSSR
no.8:124-127 :61. (MIRA 14:8)

1. Transportno-energeticheskiy institut Sibirskogo otdeleniya
AN SSSR, Novosibirsk.
(Coal) (Combustion)

YAVORSKIY, I.A.

"Chemistry and genesis of coal" by T.A. Kukhareno. Reviewed
by I.A. Iavorskii. Izv. Sib. otd. AN SSSR no.2:128-130 '62.
(MIRA 16:10)

LAKHANIN, V.V.; prof., doktor tekhn. nauk; KHMEL'NITSKIY, Ye.P.,
dotsent; KHOZE, A.N., dotsent, kand. tekhn. nauk; YAVORSKIY,
I.A., kand. tekhn. nauk

Using stokers with short chain-grates on river ships. Trudy
NIIVTa no.10:98-104 '62. (MIRA 16:6)

1. Sibirskoye otdeleniye AN SSSR.
(Stokers, Mechanical)

YAVORSKIY, I.A., otv. red.; ORENDAKH, M.S., otv. red.; TARASOVA,
H.V., red.

[Kinetics of the combustion of mineral fuels] Kinetika
goreniia iskopaemykh topliv. Novosibirsk, Izd-vo Sibirskogo
otd-niia AN SSSR, 1963. 157 p. (MIRA 17:6)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Khimiko-
metallurgicheskiy institut.

YAVORSKIY, I. I., doktor tekhn. nauk, IL'YEV, G. I.; ORAMBAY, M. S.; YELCHIK, V. I.; LEI KOVSKAYA, L. I., red.

[Effect of the structure of mineral coals on their combustion] Vliyanie stroeniya iskopaemykh uglei na ikh gorenie.
[By] I. I. Yavorskii i dr. Novosibirsk, Izd-vo Sibirskogo otd-niia AN SSSR, 1963. 175 p. (MIRA 17:8)

ADRAMENKO, I.A.; YAVORSKIY, I.A.

Behavior of germanium during the thermal processing of coals and semicoke in an atmosphere of hydrogen. Trudy Khim.-met.inst.Sib. otd. AN SSSR no.18:151-156 '63.

Volatilization of germanium during the thermal processing of coals in a flow of nitrogen. Ibid.:157-160 (MIRA 17:4)

TITLE: Investigation of the functioning of pressed cathodes under gas-discharge conditions

21

SOURCE: Radiotekhnika i elektronika, v. 10, no. 4, 1965, 741-748

TOPIC TAGS: cathode emission, pressed cathode, gas discharge tube

ABSTRACT: A new method of continuous monitoring of the emission from a cathode functioning under gas-discharge conditions is proposed. Evaluation of parameters of the emission is made. It is shown that the emission of the cathode is stable and the vapor is reported. It was found that a high-transparent tungsten grid placed 1.5-2 mm from the cathode can be used for emission

L 49508-05

ACCESSION NR: AP5010108

distribution in the positive column in Ne at 0.03 torr is reported. The admission

equilibrium value after 6 sec

ASSOCIATION: none

SUBMITTED: 02Jan64

ENCLOSURE

SUB CODE: EC

NUMBER OF PAGES

OTHER: 00

KUCHERENKO, Ye.T.; YAVORSKIY, I.A.

Study of the operation of pressed cathodes under gas discharge
conditions. Radiotekh. i elektron. 10 no.4:741-748 Ap '65. (MIRA 18:5)

YAVORSKIY, I. V.

PA 75T95

USSR/Physics
X-Rays - Goniometers
Photograph, X-Ray

May 1948

"The LITMO X-Ray Goniometer (Type Sauter I)," D. B. Gogoberidze and I. V. Yavorskiy, Leningrad Inst of Precision Mechanics and Optics, 6 pp

"Zhur Tekh Fiziki" Vol XVIII, No 5

Instrument described is an experimental model constructed in authors' institute. There are two X-ray photographs of a rock salt crystal. Submitted 12 Nov 1947.

75T95

YAYORSKI, I. V.

The effect of some types of structural defects on the geometry of crystal diffraction maximums. I. V. Yayorski. Kristallografiya Sbornik 1955 No. 4. 102-103. Referat. Dokl. Akad. Nauk SSSR 1956 135: 24888. The effect of structural irregularities on the geometry of crystal structure on the shape of diffraction pattern is analyzed. The cases of single and multiple irregularities, of dislocations, diffraction of amorphous substances, and of lamellar minerals of the graphite type are considered. N. V.

YAVORSKIY, I.V.

Fringe effects of X-ray scattering in crystals. Kristallografiia
(L01) no.4:183-187 '55. (MLRA 10:5)

(X-rays--Scattering)

Category : USSR/Solid State Physics - Structural crystallography

E-3

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1098

Author : Gogoberidze, D.B., Firsov, V.I., Yavorskiy, I.V.

Title : X-ray Goniometer LITMo-11 (RG-48).

Orig Pub : Sb. statey Leningr. in-ta tochnoy. mekhan. i optiki, 1955, vyp. 18, 24-30

Abstract : Description of an x-ray goniometer representing an improvement over the previous model RG-17. The diameter of the cylindrical cassette is 80 mm, the film dimensions are 160 x 200 mm, the distance from the film plane to the crystal is 50.4 mm, and the size of the flat film is 160 x 160 mm.

Card : 1/1

YAVORSKIY, I.V.

USSR / Structural Crystallography.

E-3

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9179

Author : Yavorskiy, I.V.

Title : New Method of Photography of Crystal-Diffraction Maxima.

Orig Pub : Sr. Statey Leningr. in-ta tochnoy mekhan. i optiki, 1955,
vyp. 18, 71-81

Abstract : To eliminate the appearance of ineffective regions, the sites of which do not fall on the X-ray photograph in the usually employed methods for photography of the reciprocal lattice, (KFOR, Roentgenogoniometer), and to simplify the determination of the spatial group, it is proposed to employ a new scheme for the photography of the zero sections of the reciprocal lattice, making it possible to obtain photographs of the planes of the zone of the reciprocal lattice, including two coordinate zones (if the crystal is mounted along one of the crystallographic axis) without

Card : 1/2

USSR / Structural Crystallography.

E-3

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9179

Abstract : re-mounting the crystal. To set the crystal, it is necessary first to carry out an adjusting photograph of the plane perpendicular to the axis of the zone. A series of such X-ray photographs (5 -- 6 photos) is sufficient for the establishment of the symmetry of the reciprocal lattice of crystals of all syngonies, with the exception of the triclinial; they can be used also in the construction of the Fourier projections. A shortcoming of the scheme is the rather complicated construction of the camera. The LITMO (Leningrad Institute for Precision Mechanics and Optics) goniometer can be used for the photography in accordance with the proposed scheme.

Card : 2/2

YAVORSKIY, I. V.

USSR / Solid State Physics / Structural Crystallography

E-4

Abs Jour : Ref Zhur - Fizika, No.5, 1957 No. 11609.

Author : Yavorskiy, I.V.

Inst : -

Title : Experience in Employing the LITMO-1 X-ray Goniometer.

Orig Pub : Sb. statey Leningr. in-ta tochnoy mokhan. o optiki, 1955,
vyp. 18, 82 - 92.

Abstract : No abstract.

Card: 1/1

YAVORSKIY, I. V.

USSR/Physical Chemistry - Crystals, B-5

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 159

Author: Snarskiy, V. V., and Yavorskiy, I. V.

Institution: Leningrad Institute for Precision Mechanics and Optics

Title: Determination of the Space Lattice of Single Crystals with One Setting of the Type LITMO-II X-Ray Goniometer

Original

Periodical: Sb. statey Leningr. in-ta tochnoy mekhan. i optiki, 1955, Vol 18, 93-103

Abstract: An investigation has been carried out with a view toward establishing the feasibility of determining the space lattice and the dimensions of the unit cell of crystals with one setting of the type LITMO II X-ray goniometer. The results obtained with crystals of known structure (SiO_2 and $\text{Sb}(\text{C}_6\text{H}_5)_3\text{Cl}_2$) are in sufficiently close agreement with previous measurements. This, in the opinion of the authors, confirms the applicability of the method described.

Card 1/1

"APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R001962320001-7

APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R001962320001-7"

Yavorskiy, I. V.

USSR/ Solid State Physics / Structural Crystallography

E-4

Abs Jour : Ref Zhur - Fizika, No. 5, 1957 No. 11586.

Author : Yavorskiy, I. V.

Inst : -

Title : Fine Structure of the Reciprocal Lattice Space.

Orig Pub : Kristallografiya, Vyp. 5. M., Metallurgizdat, 1956,
185 - 193.

Abstract : A geometrical analysis is given, in the reciprocal-lattice space, for the case when the beams of X-rays reflected from the crystal can be again reflected in the same crystal by other families of planes. In this case it is possible to obtain reflections that are forbidden by the structural factor, since there occur in this case auxiliary reciprocal lattices, that are displaced parallel by a vector H_{hkl} relative to the fundamental reciprocal lattice of the crystal. Calculations of the possible number of

Card: 1/2

USSR / Solid State Physics / Structural Crystallography

E-4

Abs Jour : Ref Zhur - Fizika, No. 5, 1957 No. 11586.

Abstract : secondary maxima are given and examples of constructions are given for the lattices of graphite and diamond. Also considered is the problem of the maximum and minimum spheres of the existence of the reciprocal lattice; the first is connected with the weak attenuation of the reflections (sites) with the distance from the origin of the reciprocal lattice, owing to the thermal vibrations of the atoms, and the second is connected with the absence of inverse-lattice sites in the region near the origin, with a radius less than the minimum n/d for the given structure. Ways of calculating the maximum sphere are given, and recommendations are made concerning the choice of the suitable characteristic radiation in X-ray photography of a given crystal. Attention is called to the possibility of their appearing inside the minimum sphere of extraneous maxima and effective scattering at small angles, which should be taken into account when interpreting the diffraction patterns.

Card: 2/2

YAVORSKIY, I.V.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1554
 AUTHOR ELPAT'EVSKAJA, O.D., KONOKOVA, R.A., REGEL', A.R., JAVORSKIY, I.V.
 TITLE On the Stability of the Crystalline Structure of the System of
 the Solid Solutions HgSe - HgTe.
 PERIODICAL Zhurn.techn.fiz, 26, fasc.10, 2154-2156 (1956)
 Issued: 11 / 1956

The cast samples of HgSe and HgTe and their solid solutions were, as usual, produced by melting the initial components in evacuated quartz ampules. Also the further treatment of the samples is described. These solid solutions are characterized by a great mobility of their current carriers (up to $15.000 \text{ cm}^2/\text{V}.\text{sec}$) and maximum mobility is attained by the solid solution with 50% HgSe and 50% HgTe. X-ray investigations of structure were carried out in the case of cast and powdery samples with DEBYE'S powder method, but in the case of film-like samples the grinding method was employed. The constants of the crystal structure measured are shown in a table.

Conclusions: Annealing changes the constant of crystal structure in the HgSe-HgTe system only little, and the structure itself is left unchanged. The samples of HgSe and HgTe obtained by the simple mechanical mixing of components have the same crystal structure as the cast samples with the same composition. In the films of the HgSe-HgTe system a structure with the same parameters as in the cast samples is found, no matter whether they are transparent or not. Thus the films are distinguished in structure apparently only by the "size of grain". HgSe proved to be a very stable compound. Even at a sublimation temperature of

Yurn.techn.fis,26, fasc.10, 2154-2156 (1956) CARD 2 / 2 PA - 1554
 500°C sublimation takes place (if the lattice parameters of the obtained film and electric properties are taken as a basis) without any noticeable dissociation. HgTe turned out to be less stable than HgSe. Already at an evaporation temperature of 320° the parameters of the crystal lattice of the obtained film change noticeably. This is in agreement with the test results obtained by BRIDGMAN, according to which HgTe is the only substance that is dissociated at a pressure of 15000 atm and at a temperature of 20° C. The films of the solid solutions, which contain a large quantity of HgTe, are thermally less stable than the HgSe films. The films which are transparent in the optical spectral range have a crystalline but finely dispersive structure, which is confirmed by the data of electronographical analysis.

INSTITUTION:

YAVORSKIY, I.V.
USSR/Solid State Physics - Structural Crystallography

E-3

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 892

Author : Krasavin, V.N., Yavorskiy, I.V.

Inst : -

Title : Ionization X-ray Apparatus.

Orig Pub : Tr. Lennigr. tekhnol. in-ta im. Lensoveta, 1957, vyp. 37,
98-106

Abstract : Description of a simplified construction of an ionization X-ray apparatus. The apparatus consists of an X-ray set URS-70 with a BSBI-CU tube, a spectrograph-goniometer, a proportional gas amplifier with an electrometric and dc amplifier with a power supply, and a mirror galvanometer with a photo-recording apparatus. The spectrograph-goniometer makes it possible to carry out automatic synchronous rotation of the specimen and of the counter with the aid of a SD-2 motor and reduction gear, and to measure the rotation of the specimen and of the counter with an

Card 1/2

USSR/Solid State Physics - Structural Crystallography

E-3

• Abs Jour : Ref Zhur - Fizika, No 1, 1958, 892

accuracy of $\pm 30''$. The focusing of the reflected rays on the slit of the counter is by the Kurdyumov method. The proportional gas amplifier is filled with a mixture of Ar (320 mm mercury) and alcohol (20 mm mercury), the coefficient of gas amplification of the counter is 250. The electrometric dc amplifier is built around an electrometric petrode (LELP), using the Bart circuit. The mirror galvanometer with photo-recording apparatus makes it possible to record continuously the intensity curve. The accuracy of the measurements of small intensities is 10 -- 11%, of larger intensities (100 pulses per second and more) is 5 -- 6%. The accuracy of angle measurement is 3 -- 5'.

Card 2/2

MISHCHENKO, K.P.; PONOMAREVA, A.M.; RAVDEL', A.A.; BARON, N.M.;
YEGOROV, I.M.; KVIAT, E.I.; VOLOVA, Ye.D.; MARKOVICH, V.G.;
SEMENOV, G.I.; MARGOLIS, V.N., SMORODINA, T.P.; YAVORSKIY,
I.V. Prinimal uchastiye FRANK-KAMENETSKIY, V.A.; TOMARCHENKO,
S.L., red.; LEVIN, S.S., tekhn. red.

[Practical work in physical chemistry] Prakticheskie raboty po
fizicheskoi khimii. Izd.2., perer. Leningrad, Gos. nauchno-
tekhn. izd-vo khim. lit-ry, 1961. 374 p. (MIRA 15:2)
(Chemistry, Physical and theoretical--Laboratory manuals)

YAVORSKIY, I.V.; KONDRAT'YEVA, T.A., red.

[Symmetry mappings of physical spaces in Fourier spaces;
computation tables] Otoobrazhenie simmetrii fizicheskogo
prostranstva v prostranstve Fur'ye; raschetnye tablitsy.
Moskva, Vysshaya shkola, 1964. 174 p. (MIRA 17:9)

YAVORSKIY, I.V.

Mapping the symmetry of a physical space onto a Fourier space.
Kristallografiya no.2:158-165 Mr-Apr '63. (MIRA 17:8)

1. Leningradskiy tekhnologicheskii institut imeni Lensovet
i Kristallo-rentgenovskaya laboratoriya imeni prof. B.P.
Orelkina, Leningrad.

96-58-2-14/23

AUTHOR: Yavorskiy, I.Ya., Candidate of Technical Sciences

TITLE: On the Influence of the Petrographic Composition and Structure of Hard Coal on the Process of Combustion
(O vliyanii petrograficheskogo sostava i struktury kamennykh ugley na protsess goreniya)

PERIODICAL: Teploenergetika, 1958, No 2, pp. 68 - 72 (USSR)

ABSTRACT: The common view that coal is a relatively uniform organic substance is inadequate for correct evaluation of the nature of the interaction between coal and oxygen. According to modern ideas, all coals have a common origin and consist of three main petrographic components; vitrene, fuzene and formal elements (spores, resinous and waxy substances, etc.). The relationship between these components depends on the type of plant from which the coal was formed and also on the conditions of its formation. In most cases, the main mass of the coal consists of a mixture of petrographic ingredients such as durene, in which the formal elements are cemented by a vitrifying mass, and clar-ene (vitrene with a small admixture of formal elements). Each of the petrographic components has its own thermal and physico-chemical properties and, therefore, influences the preparation of fuel for burning and the combustion process. The data in Table 1 show that the volatiles content of fuzene

Card1/4

96-58-2-14/23

On the Influence of the Petrographic Composition and Structure of
Hard Coal on the Process of Combustion

is about half that of vitrene or clarene; also that the calorific value and hydrogen content are lower. These data show the need to burn each of the petrographic components differently. An analysis of two grades of Kuzbas coal in respect of petrographic constituents is presented in Fig.1 and discussed at some length. The two coals hardly differ in thermal-technical characteristics, volatiles content or calorific value, but they do not burn in the same way in identical furnaces. The reasons for the difference can be found only by investigating the influence of the petrographic composition. Vitrenised substance contains the largest number of links with oxygen-containing groups and radicals with free valences. It therefore undergoes the most intense oxidative destruction at the very lowest temperatures. Graphs of the intensity of combustion of different petrographic components are given in Fig.2 and graphs of intensity of combustion of mixtures of two petrographic components for different quantitative ratios in Fig.3.

Card2/4 Then combustion takes place in the diffusion region where the reaction develops mainly on the surface of the fuel, fuzene loses its advantages over the other components. Moreover,

96-58-2-14/23

On the Influence of the Petrographic Composition and Structure of Hard Coals on the Process of Combustion

fuzene-containing components may predominate in fuel particles that are carried over, as is shown by slag analyses given in Table 2. There is reason to suppose that the petrographic composition influences the combustion of pulverised fuel as well as that of stoker-fired fuel. This is connected with the fact that fuzene is of low mechanical strength in large lumps and has a high abrasive hardness when milled. Therefore, it is easily milled only until a certain dimension is reached. Hence, the larger particles in the fuel may be the hardest to burn.

Knowledge of the petrographic composition of coal makes it possible to predict special features of the combustion of washed coal. Low-ash vitrene and clarene are mainly removed from the coal in the manufacture of metallurgical coke; the remainder of the fuel, including the fuzene, almost all the durene, and the mineralised part, is used for power generation. Therefore, the combustion of washery wastes will differ from that of the main coal.

There is evidence that over quite a wide range of temperature, the oxidation process is heterogeneous, i.e., free oxygen

Card 3/4

96-58-2-14/23

On the Influence of the Petrographic Composition and Structure of Hard Coal on the Process of Combustion

combines directly with solid coal. Data of gas analysis given in Figs. 4 and 5 for vitrene from one and the same coal when heated in an oxidising medium and when heated without oxygen confirm this. The article then proceeds to examine the different kinds of oxidation reactions that occur with coal at different temperatures.

There are 3 tables and 5 figures and 7 Russian references.

ASSOCIATION: West Siberian Branch of the AS USSR (Zapadno-Sibirskiy filial AN SSSR)

AVAILABLE: Library of Congress
Card 4/4 1. Coal-Structure 2. Coal-Combustion